Alaska Department of Fish and Game
Division of Wildlife Conservation
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Landscape Ecology and Population Dynamics of Moose in GMU 13

J. W**ard** Testa

Research Performance Report
1 July 2001–30 June 2002
Federal Aid in Wildlife Restoration
Grant W-27-5, Study 1.55

This is a progress report on continuing research. Information may be refined at a later date.

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FEDERAL AID
ANNUAL RESEARCH PERFORMANCE REPORT

ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF WILDLIFE CONSERVATION
PO Box 25526
Juneau, AK 99802-5526

PROJECT TITLE: Landscape ecology and population dynamics of moose in Game Management Unit 13

PRINCIPAL INVESTIGATOR: J. Ward Testa

COOPERATORS:

FEDERAL AID GRANT PROGRAM: Wildlife Restoration

GRANT AND SEGMENT NR.: W-27-5

PROJECT NR.: 1.55

WORK LOCATION: Game Management Unit 13 A

STATE: Alaska

PERIOD: 1 July 2001 – 30 June 2002

I. PROGRESS ON PROJECT OBJECTIVES

OBJECTIVE 1: Establish a comprehensive GIS for GMU 13.

OBJECTIVE 2: Determine the feasibility and potential costs and benefits of replacing traditional moose counts with modern spatial density estimates.

OBJECTIVE 3: Develop statistical/biological models of population trends for moose in the NSA.

OBJECTIVE 4: Develop and test landscape models of habitat quality and utilization for moose in GMU 13.

OBJECTIVE 5: Develop and test landscape models of predation risk for moose in GMU 13.

II. SUMMARY OF WORK COMPLETED ON JOBS IDENTIFIED IN ANNUAL PLAN THIS PERIOD

JOB 1: Trend count and composition surveys

Trend counts and composition surveys were flown in Units 13A, B, and E during November 2001.

JOB 2: Moose density estimate

A moose survey was completed on 10 November 2001. It indicated a further decline in moose population levels (1501 moose, 80% C.I.: 1307-1695).

JOB 3: Spatial and population modeling

Deterministic spreadsheet models of moose-wolf and moose-bear interactions were developed as a first step in a theoretical treatment of the multi-predator situation in the Nelchina Basin.

JOB 4: Radio-tracking survival/production

Monthly telemetry flights were conducted throughout the segment period to monitor movements and survival. Between 15 May and 29 June, telemetry flights were conducted on a daily basis to determine moose productivity and calf survival.

JOB 5: Radiocollaring adult moose

No adult moose were radiocollared.

JOB 6*:* Radiocollaring yearling moose

Six yearling moose were radiocollared on 5 April. Five of these yearlings were from known radiocollared cows.

JOB 7: Meetings and publications

See publications (IV).

III. ADDITIONAL FEDERAL AID-FUNDED WORK NOT DESCRIBED ABOVE THAT WAS ACCOMPLISHED ON THIS PROJECT DURING THIS SEGMENT PERIOD

IV. PUBLICATIONS

Testa, J. W. (In Press-2002) Does predation on neonates inherently select for earlier births? Journal of Mammalogy 83(3): 000-000.

Berger, J., P. Stacey, J. W. Testa, T. Roffe and S. Monfort. (In Press-2003). Through the eyes of moose: North American large carnivores and effects on biological diversity. Animal Behavior and Wildlife Management. M. Festa-Bianchet and M. Appolino (eds.), Island Press.

Ver Hoef, J. and J. W. Testa. A Bayesian analysis of population trends in moose. (Abstract accepted at the International Moose Conference and Workshop, Lillehammer, Norway, held in August 2002).

V. RECOMMENDATIONS FOR THIS PROJECT

I recommend that the moose estimates be recalculated using sample unit areas instead of estimates of moose habitat in the sample unit. Since the statistics in the estimator are density based, this should result in a more precise population estimate.

VI. APPENDIX

VII. PROJECT COSTS FOR THIS SEGMENT PERIOD

FEDERAL AID SHARE $ 119,388 STATE SHARE $ 39,796 = TOTAL $159,184

VIII. PREPARED BY:

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APPROVAL DATE: _____